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# FEE TRANSMITTAL for FY 2005

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) \$180.00

## Complete if Known

Application Number	09/849,537
Filing Date	May 7, 2001
First Named Inventor	Tonglong Zhang
Examiner Name	Lewis, Monica
Art Unit	2822
Attorney Docket No.	1875.0370000

## METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit card ☐ Money Order ☒ Other\*\* ☐ None☐ \*Charge any deficiencies or credit any overpayments in Deposit Account: the fees to Deposit Acct. No. 19-0036.Deposit  
Account  
Number  
Deposit  
Account  
Name

19-0036

Sterne, Kessler, Goldstein & Fox  
P.L.L.C.

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments☐ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395	Utility filing fee	
1002 350	2002 175	Design filing fee	
1003 550	2003 275	Plant filing fee	
1004 790	2004 395	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$) 0.00

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	- 20 **	X	
Multiple Dependent	- 3 **	X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 88	2201 44	Independent claims in excess of 3
1203 300	2203 150	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$) 0.00

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 430	2252 215	Extension for reply within second month	
1253 980	2253 490	Extension for reply within third month	
1254 1,530	2254 765	Extension for reply within fourth month	
1255 2,080	2255 1,040	Extension for reply within fifth month	
1401 340	2401 170	Notice of Appeal	
1402 340	2402 170	Filing a brief in support of an appeal	
1403 300	2403 150	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,370	2453 685	Petition to revive - unintentional	
1501 1,370	2501 685	Utility issue fee (or reissue)	
1502 490	2502 245	Design issue fee	
1503 660	2503 330	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner.	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	180.00
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 790	2809 395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 790	2810 395	For each additional invention to be examined (37 CFR 1.129(b))	
1801 790	2801 395	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 180.00

## SUBMITTED BY

(Complete if applicable)

Name (Print/Type)	Jeffrey S. Weaver	Registration No. (Attorney/Agent)	45,608	Telephone	(202) 371-2600
Signature	[Signature]			Date	October 28, 2004

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

ZHANG *et al.*

Appl. No.: 09/849,537

Filed: May 7, 2001

For: **Die-Up Ball Grid Array Package  
with a Heat a Spreader and Method  
for Making the Same**

Confirmation No.: 7984

Art Unit: 2822

Examiner: Lewis, Monica

Atty. Docket: 1875.0370000

**Seventh Supplemental Information Disclosure Statement**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign

patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.

- ☐ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- ☒ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☒ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p).

- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$\_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below:
- ☒ 7. Document AS4 is a co-pending application that is available for viewing by the Examiner on the USPTO's IFW system, therefore a copy of document AS4 is not enclosed. Copies of the remaining documents listed are submitted herewith.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No.\_\_\_\_\_, filed

\_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

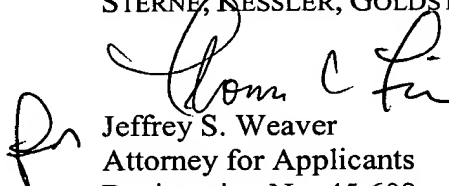
- ☐ 9. No copies of U.S. patents and patent application publications cited on the attached Form PTO-1449 are submitted in accordance with 1276 OG 55 because this application was filed after June 30, 2003.
- ☐ 10. It is expected that the examiner will review the prosecution and cited art in the parent application no. \_\_\_\_\_, filed \_\_\_\_\_, in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

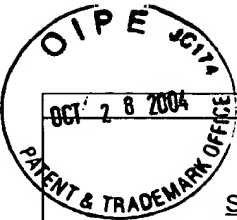
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

 *Jeffrey S. Weaver*, REG NO. 43,610  
Jeffrey S. Weaver  
Attorney for Applicants  
Registration No. 45,608

Date: 10/28/04

1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600

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FORM PTO-1449		Page 1 of 4	
		ATTY. DOCKET NO. 1875.0370000	APPLICATION NO. 09/849,537
SEVENTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		FIRST NAMED INVENTOR Tonglong Zhang	
		FILING DATE May 7, 2001	ART UNIT 2822

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA1	5,650,662	07/1997	Edwards <i>et al.</i>			
	AB1	5,889,321	03/1999	Culnane <i>et al.</i>			
	AC1	5,895,967	04/1999	Stearns <i>et al.</i>			
	AD1	5,907,189	05/1999	Mertol			
	AE1	5,976,912	11/1999	Fukutomi <i>et al.</i>			
	AF1	5,977,633	11/1999	Suzuki <i>et al.</i>			
	AG1	6,034,427	03/2000	Lan <i>et al.</i>			
	AH1	6,040,984	03/2000	Hirakawa			
	AI1	6,207,467 B1	03/2001	Vaiyapuri <i>et al.</i>			
	AJ1	6,278,613 B1	08/2001	Fernandez <i>et al.</i>			
	AK1	6,313,525 B1	11/2001	Sasano			

**FOREIGN PATENT DOCUMENTS**

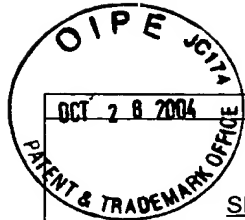
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL1						Yes No
	AM1						Yes No
	AN1						Yes No
	AO1						Yes No
	AP1						Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AR	1	Amkor package data sheet, "SuperFC <sup>®</sup> ", from <a href="http://www.amkor.com/Products/all_datasheets/superfc.pdf">http://www.amkor.com/Products/all_datasheets/superfc.pdf</a> , 2 pages (Jan. 2003).
	AS	1	Andros, F., "Tape Ball Grid Array," from Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 619-620, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).
	AT	1	Brofman, P.J. <i>et al.</i> , "Flip-Chip Die Attach Technology," Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 315-349, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).

EXAMINER	DATE CONSIDERED
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**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



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SEVENTH SUPPLEMENTAL  
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.  
1875.0370000APPLICATION NO.  
09/849,537FIRST NAMED INVENTOR  
Tonglong ZhangFILING DATE  
May 7, 2001ART UNIT  
2822

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2	6,528,869 B1	03/2003	Glenn <i>et al.</i>			
	AB2	6,614,660 B1	09/2003	Bai <i>et al.</i>			
	AC2	6,617,193 B1	09/2003	Toshio <i>et al.</i>			
	AD2	6,657,870 B1	12/2003	Ali <i>et al.</i>			
	AE2	6,664,617 B2	12/2003	Siu			
	AF2	6,724,071 B2	04/2004	Combs			
	AG2	6,724,080 B1	04/2004	Ooi <i>et al.</i>			
	AH2	2001/0001505 A1	05/2001	Schueller <i>et al.</i>			
	AI2	2001/0040279 A1	11/2001	Mess <i>et al.</i>			
	AJ2	2002/0171144 A1	11/2002	Zhang <i>et al.</i>			
	AK2	2002/0185717 A1	12/2002	Eghan <i>et al.</i>			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL2						Yes No
	AM2						Yes No
	AN2						Yes No
	AO2						Yes No
	AP2						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

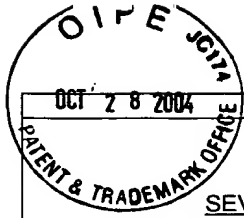
	AR	2	Freyman, B. and Petrucci, M., "High-Pincount PBGAs," <i>Advanced Packaging</i> , pp. 44-46, An IHS Group Publication (May/June 1995).
	AS	2	Ghosal, B. <i>et al.</i> , "Ceramic and Plastic Pin Grid Array Technology," Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 551-576, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).
	AT	2	Harper, C.A. (ed.), <i>Electronic Packaging And Interconnection Handbook</i> , Third Edition, pp. 7.58-7.59, ISBN No. 0-07-134745-3, McGraw-Hill Companies (2000).

EXAMINER

DATE CONSIDERED

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May 7, 2001ART UNIT  
2822

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA3	2004/0072456 A1	04/2004	Dozier, II <i>et al.</i>			
	AB3						
	AC3						
	AD3						
	AE3						
	AF3						
	AG3						
	AH3						
	AI3						
	AJ3						
	AK3						

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL3						Yes No
	AM3						Yes No
	AN3						Yes No
	AO3						Yes No
	AP3						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

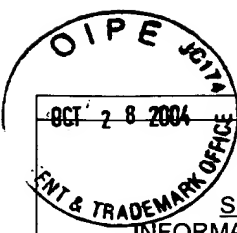
	AR	<u>3</u>	Lin, S. and Chang, N., "Challenges in Power-Ground Integrity," <i>Proceedings Of The 2001 International Conference On Computer-Aided Design</i> , pp. 651-654 (November 4-8, 2001).
	AS	<u>3</u>	Lloyd, J. and Overhauser, D., "Electromigration wreaks havoc on IC design," <i>EDN</i> , pp. 145-148 (March 26, 1998).
	AT	<u>3</u>	Song, W.S. and Glasser, L.A., "Power Distribution Techniques for VLSI Circuits," <i>IEEE Journal Of Solid-State Circuits</i> , Vol. SC-21, No. 1, pp. 150-156 (February 1986).

EXAMINER

DATE CONSIDERED

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OCT 28 2004		Page 4 of 4	
FORM PTO-1449		ATTY. DOCKET NO. 1875.0370000	APPLICATION NO. 09/849,537
SEVENTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		FIRST NAMED INVENTOR Tonglong Zhang	
		FILING DATE May 7, 2001	ART UNIT 2822

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA4						
	AB4						
	AC4						
	AD4						
	AE4						
	AF4						
	AG4						
	AH4						
	AI4						
	AJ4						
	AK4						

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL4						Yes No
	AM4						Yes No
	AN4						Yes No
	AO4						Yes No
	AP4						Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AR	4	Tang, K.T. and Friedman, E.G., "Simultaneous Switching Noise in On-Chip CMOS Power Distribution Networks," <i>IEEE Transactions On Very Large Scale Integration (VLSI) Systems</i> , Vol. 10, No. 4, pp. 487-493 (August 2002).
	AS	4	Zhao, S. <i>et al.</i> , U.S. Patent Application No. 10/870,927, filed June 21, 2004, entitled "Apparatus and Method for Thermal and Electromagnetic Interference (EMI) Shielding Enhancement in Die-up Array Packages".
	AT	4	Khan, R. <i>et al.</i> , U.S. Patent Application No. 10/952,172, filed September 29, 2004, entitled "Die Down Ball Grid Array Packages and Method for Making Same".

EXAMINER	DATE CONSIDERED
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